

Remarks

Status of the Claims

Claims 1, 3, and 4 are currently pending in the application. Claim 1 is currently amended. Claim 2 is canceled. New claims 3 and 4 are added. Reconsideration and allowance of all of the pending claims are respectfully requested.

This amendment does not add new matter to the application. New claim 3 finds support in original claim 2. New claim 4 finds support in the specification at page 4, line 19. The amendments to claim 1 are editorial and do not change the scope of the claim. Accordingly, no new matter is added and entry of this amendment is respectfully requested.

Claim Rejections - 35 U.S.C. §112 (page 2 of the Office Action)

Claims 1 and 2 are rejected under 35 U.S.C. §112, second paragraph, as being indefinite. The Examiner points out a number of grammatical errors and asserts that the claims generally do not conform with U.S. practice. Applicants respectfully submit that the current claim amendments fully address this rejection. Accordingly, withdrawal of this rejection is respectfully requested.

Claim Rejections - 35 U.S.C. §102 (pages 3-4 of the Office Action)

Claims 1 and 2 are rejected under 35 U.S.C. §102 as being anticipated by Hasegawa '774 (U.S. Patent No. 6,207,774). Applicants respectfully traverse this rejection.

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." MPEP §2131, citing *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). Applicants respectfully submit that each and every element of the present claims 1, 3, and 4 are not disclosed or suggested by Hasegawa '774. Hasegawa '774 does not disclose or suggest a process for producing an olefin polymer which uses a catalyst consisting essentially of a tetrasubstituted metallocene compound in combination with at least one compound selected from (b-1) an organoaluminum oxy-compound, and (b-3) an organoaluminum compound. Applicants respectfully submit that because all of the elements of claims 1, 3, and 4, are not disclosed or suggested by the prior art, this rejection must be withdrawn.

Hasegawa '774 discloses a polymerization catalyst comprising a metallocene compound (a), an ionizing ionic compound (b), and an organoaluminum compound (c). However, as expressly stated at column 2, line 57 to column 4 line 29, the fluorenyl group in the metallocene compound is either an unsubstituted fluorenyl group, or a disubstituted fluorenyl group. Hasegawa '774 does not disclose or suggest the inclusion of a tetrasubstituted fluorenyl group. Examples 10 and 11 of Hasegawa '774, cited by the Examiner, disclose metallocene compounds that are disubstituted, i.e., diphenylmethylenecyclopentadienyl (2,7-dimethylfluorenyl)zirconium dichloride and diphenylmethylenecyclopentadienyl (2,7-di-*t*-butylfluorenyl) zirconium dichloride.

Present claims 1, 3, and 4 include a catalyst consisting essentially of (A) a bridged metallocene compound of the formula [I], and (B) at least one compound selected from the group consisting of (b-1) and (b-3). The catalyst of claims 1, 3, and 4 is therefore not disclosed or suggested by Hasegawa '774, and this rejection must be withdrawn.

2. *Unexpected results*

The prior art does not disclose or suggest using a catalyst consisting essentially of (A) a bridged metallocene compound of the formula [I], and (B) at least one compound selected from the group consisting of (b-1) and (b-3) as discussed above. Further, Applicants hereby submit a **Declaration** by Mr. Yasushi TOHI, to rebut any alleged *prima facie* case of obviousness.

Experiment A in the Declaration is carried out using the metallocene compound: diphenylmethylene(cyclopentadienyl)(3,6-di-*t*-buthylfluorenyl)zirconium dichloride. The results shown in Table A, make clear that the polymerization activity (119.4 Kg/mmol-Zr hr, from Example 1: 59.7 Kg/mmol-zr, 30 minutes, shown in Table 1 of the specification) using the metallocene compound having a tetrafluorenyl group (Example 1) is unexpectedly superior to the polymerization activity (47.2 Kg/mmol-Zr·hr) using the metallocene compound having a difluorenyl group (Experiment A).

Table A

	(A) Metallocene compound	(B) co-catalyst	Polymerization activity (Kg/mmol- Zr·hr)
Inventive Example 1	Tetra- substituted fluorenyl group	(b-2)+(b-3)	119.4
Experiment A	Di— substituted fluorenyl group	(b-2)+(b-3)	47.2

There is no disclosure or suggestion in the prior art of such unexpectedly superior effects attained by the use of a metallocene compound having a tetrafluorenyl group. Accordingly, the present claims are patentable over the prior art.

The Applicants respectfully submit that present claims 1,3 and 4 have been demonstrated to be patentable over the prior art. Withdrawal of all of the pending rejections and allowance of the application is respectfully requested.

Conclusion

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact J. Mark Konieczny (Reg. No. 47,715) at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

Application No. 10/550,021
Amendment dated February 6, 2007
Reply to Office Action of October 6, 2006

Docket No.: 1155-0311PUS1

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17; particularly, extension of time fees.

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Respectfully submitted,

By 

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Attachment:

Declaration